Covering the Bases on BIRD FLU

Monitoring of Wild Birds Starting Up in North Dakota

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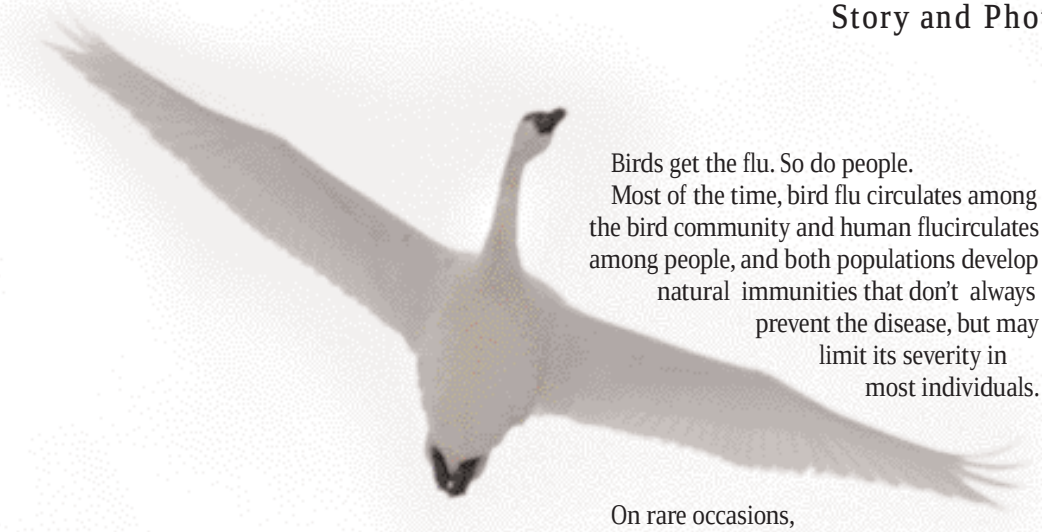

As part of the nationwide bird flu surveillance effort, samples are needed from tundra swans, which nest in Alaska and northern Canada.

Birds get the flu. So do people.

Most of the time, bird flu circulates among the bird community and human flucirculates among people, and both populations develop natural immunities that don't always prevent the disease, but may limit its severity in most individuals.

On rare occasions, however, avian influenza can directly infect humans. Historically these events have been unimportant. Almost all earlier infections were found just by chance, with people having no symptoms, or found in people handling infected birds and the virus caused no more than a mild conjunctivitis, according to Dr. Tom Roffe, chief of wildlife health for the U.S. Fish and Wildlife Service's Mountain Prairie Region. In fact, Roffe said, before the current events of a new avian influenza infecting people, only one death in a veterinarian working on a known infected poultry flock has been known to occur from avian influenza.

Highly pathogenic avian influenza now circulating in Asia, Africa and Europe has changed all that. This relatively new avian influenza has caused the deaths of more than 100 people since 2003, mostly in Southeast Asia.

While the strain of bird flu that can be fatal to humans has not been identified in North America to date, most experts believe it will someday arrive on this continent, possibly via transport by wild migratory birds, and that's why North Dakota Game and Fish Department biologists, staff from other agencies and organizations, and select hunters as well will be involved in an accelerated avian influenza surveillance effort starting this summer.

Most likely, the monitoring efforts in North Dakota this year won't lead to discovery of the virus, says Mike Johnson, the Game and Fish Department's game management supervisor. Still, since North Dakota is situated in a major migration corridor for both migratory game and nongame birds, it is part of a significant nationwide project designed to detect the disease at its earliest arrival, if it comes at all.

Efforts to screen migratory birds will begin later this month and continue throughout the fall until target numbers for bird samples are met.

Bird Flu Basics

In the bird community, researchers have identified many kinds of avian influenza. Only one of those, a subtype called H5N1, is a concern.

H5N1 and similar avian influenzas come in two forms, a low pathogenic strain, and a high pathogenic strain. The low pathogenic strain produces mild or no symptoms in chickens, is known to circulate in migratory birds, and is not a danger to humans.

Highly pathogenic avian influenza, H5N1 subtype, or HPAI H5N1, is the subtype that has made the leap from birds to humans. HPAI H5N1 can cause wild bird mortality, however, mass mortality of wild birds is rare, having been reported in only a couple of locations. However, HPAI H5N1 appears to be highly lethal in poultry, including chickens, turkeys, and in some cases domestic ducks and geese. Mortality can exceed thousands of birds in just a short time, because these isolated flocks do not have immunity.

HPAI H5N1 virus was first identified in birds in 1996 in China, but didn't appear on the global scene until 1997 when an outbreak in Hong Kong resulted in 18 human infections and six fatalities. Since January 2003, the World Health Organization, as of June 20, 2006, has documented 228 human cases of high path bird flu, with 130 fatalities. Most of the cases in 2004 were from Viet Nam and Thailand.

So far in 2006, 84 cases and 54 deaths have been confirmed by the World Health Organization. Most of these cases have come from Indonesia, China, Egypt and Turkey, an indication that the disease is spreading.

Typically, HPAI H5N1 virus is transmitted through close bird-to-human contact, such as handling a sick bird, defeathering and contacting nasal/ocular secretions or feces. These birds are typically at-large domestic fowl that can freely interact with other domestic birds or wild birds that might be carriers of the H5N1 virus. To date, only one set of cases, a cluster of seven people in Azerbaijan, has been linked to contact with infected wild birds, Roffe said.

So far, there is no evidence that the highly pathogenic H5N1 virus has changed to the point where it can sustainably and reliably transmit among humans. "The big concern is a mutation or recombination with a human influenza virus that allows a new virus to easily transmit from person to person ," says Johnson.

As long as the transmission is between bird and human, cases of avian influenza will likely remain localized and sporadic. Sustained human-to-human transmission could ignite a worldwide pandemic where the virus would affect a lot of people over the globe because the human population has no natural resistance to HPAI H5N1 virus.

Such human pandemics linked to avian influenza have occurred three times in the last century. In 1918 the disease may have originated in the United States and was spread by American troops into Europe during World War 1. From there it spread throughout much of the world, with estimates of the number of related human deaths ranging from 20 to 50 million.

A million or more people died in the other two pandemics.

Long-billed and short-billed dowitchers migrate through North Dakota in spring and fall, on their way to and from nesting grounds on the northern coasts of Alaska and northwest Canada (long-billed) and southern Alaska and central Canada (short-billed), where they might come in contact with birds that spend time in Asia. That's why dowitchers are on the list of shorebirds that will be collected in North Dakota for avian influenza testing this summer.

The Migratory Bird Pipeline

Scientists believe that if HPAI H5N1 comes to North America, it will be carried in one of several ways: From wild birds that mix with birds from the Asian continent and migrate back to North America, or infected Asian birds that move to North America; from domestic fowl or poultry products in global trade or illegally brought into the United States; from captured wild birds illegally moved between continents; as a contamination of inanimate objects; or by global transport systems for people.

Some birds that spend part of the year in Southeast Asia or China may migrate to northern Russia or the North American arctic to nest, where they might come in contact with North American wild birds that nest in the same arctic areas and migrate down through Alaska, Canada and the United States. The odds of one individual wild bird picking up the influenza virus from another wild bird and heading to another continent are astronomical, but with perhaps millions of birds trading back and forth, the possibility exists.

Even so, most experts believe that wild birds are extremely unlikely to transfer HPAI H5N1 into domestic flocks in North America.

Nevertheless, Johnson says it is expected that the high path bird flu virus will get to the United States, and this year all 50 states are looking for it.

In North Dakota, that effort will involve tests done on 2,000 birds. The Game and Fish Department is responsible for 1,000 of those, while the U. S. Department of Agriculture's Wildlife Services Agency will collect the other half. In addition, Wildlife Services will conduct environmental surveillance by collecting water and bird fecal samples throughout the state.

"We know we will find avian influenza, but nobody's expecting to find the high path H5N1," Johnson emphasized.

Because of its position in a major migration corridor, North Dakota is an important state for collecting samples from a variety of birds. Lesser sandhill cranes, tundra swans and pintails are the migratory game birds most likely to cross continental lines, or nest in areas that also attract birds from Asia.

Nongame birds such as long-billed dowitchers and several kinds of sandpipers are also included because they also nest in areas of the arctic and Alaska where they may mix with birds from eastern Asia.

North Dakota Testing

Many birds collected for testing in North Dakota will come from hunters, Johnson said. Game and Fish, Wildlife Services, and U.S. Fish and Wildlife Service personnel will all be involved in checking hunters for the right kinds of birds in different parts of the state. Timing is also important as samples are needed from late July into November.

It is not necessary for birds to be dead for testing. The sample is collected via a cotton swab of the cloacal (anal) opening. Live birds, such as ducks trapped during late-summer banding projects, can be released.

Birds taken by hunters need to be tested within 24 hours. Once obtained, samples are cooled down and shipped to laboratories for analysis.

"We'll try to get as many birds as possible through nonlethal means," Johnson said, or collecting birds that have been harvested by hunters.

Since there is no hunting season on the dowitchers and sandpipers, and it would be very difficult to meet the quota by trapping, Johnson says the researchers will have to collect these birds by lethal means. "Some people might be upset if they see us shooting these shorebirds," Johnson noted, "but we're going to do our best to make use of those specimens for scientific and educational purposes."

Hunter Concerns?

It's understandable that hunters would ask questions about the potential for coming in contact with a bird that is carrying the bird flu virus. "I don't think they have to be any more concerned now than they have been in the past," Johnson, an avid waterfowl hunter, said. "I'm not worried."

That said, Johnson added that hunters should use the same sanitary precautions that are always recommended, such as wearing latex gloves when cleaning all game, not just birds; washing hands, cleaning cutting boards and utensils used in processing, and cooking meat to a minimum of 165 degrees Fahrenheit, which kills any virus a bird might carry.

Hunters should also not pick up dead birds they did not take themselves, or take or try to handle live birds that appear sick.

Johnson says there won't be any check stations or similar locations to which hunters can bring birds for testing, except, perhaps for selected national wildlife refuge headquarters. Rather, agency personnel within regular or special duties will seek out hunters either before their hunts, or in the field. As hunting season approaches, the Game and Fish Department will provide more information.

"Hunters have always been very cooperative when it comes to helping with research and surveillance efforts, and we hope that will be the case again this fall," Johnson said. "This is a special effort on our part, but there's no reason for hunters to approach this fall any differently than in the past."

CRAIG BIHRLE is the Game and Fish Department's communications supervisor.

Bird Handling Processes

While there is currently little bird flu risk to people in the United States, it is always wise to practice good hygiene when handling or cleaning wild birds or poultry. Here are some specific practices to follow:

Clean completely

If you have come in contact with wild birds, do not rub your eyes, eat, drink, or smoke before you wash. Wash your hands thoroughly in soap and water or alcohol-based hand products. Wear rubber gloves when possible.

Cook thoroughly

Cook all meat, including wild birds and poultry, thoroughly (155 to 165 degrees Fahrenheit, 64 to 74 Celsius) to kill disease organisms and parasites. Avoid raw or partially cooked (runny) eggs.

Handle with care

Hunters should always follow common-sense sanitary practices when handling, cleaning, and preparing wild birds, as described above. Be sure to sanitize knives, other cleaning tools, and food preparation surfaces.

Admire from a distance

As a general rule, you should observe wildlife, including wild birds, from a distance. This protects you from possible exposure to viruses and minimizes the disturbance to the animal. Wear disposable gloves when cleaning or handling backyard feeders, bird baths or other equipment.

Inform authorities

If you find a sick or dead animal, contact your state, county, tribal, or local natural resources agency.

North Dakota Bird Flu Information

Avian influenza or bird flu carries varying degrees of risks to wild birds and mammals, domestic birds, and humans. Since November 2005 a number of state government agencies, as well as federal agencies with offices in North Dakota, have been working together on a state plan for detecting and responding to the eventual presence of bird flu.

To learn more about avian influenza on a local or worldwide basis, visit any of the following websites.

U.S. Geological Survey National Wildlife Health Center
www.nwhc.usgs.gov

U.S. Department of Health and Human Services
www.pandemicflu.gov

North Dakota Department of Health
www.health.state.nd.us

North Dakota Department of Agriculture
www.agdepartment.com/Programs/Livestock/BOAH/AvianInfluenza.htm

U.S. Fish and Wildlife Service
www.fws.gov